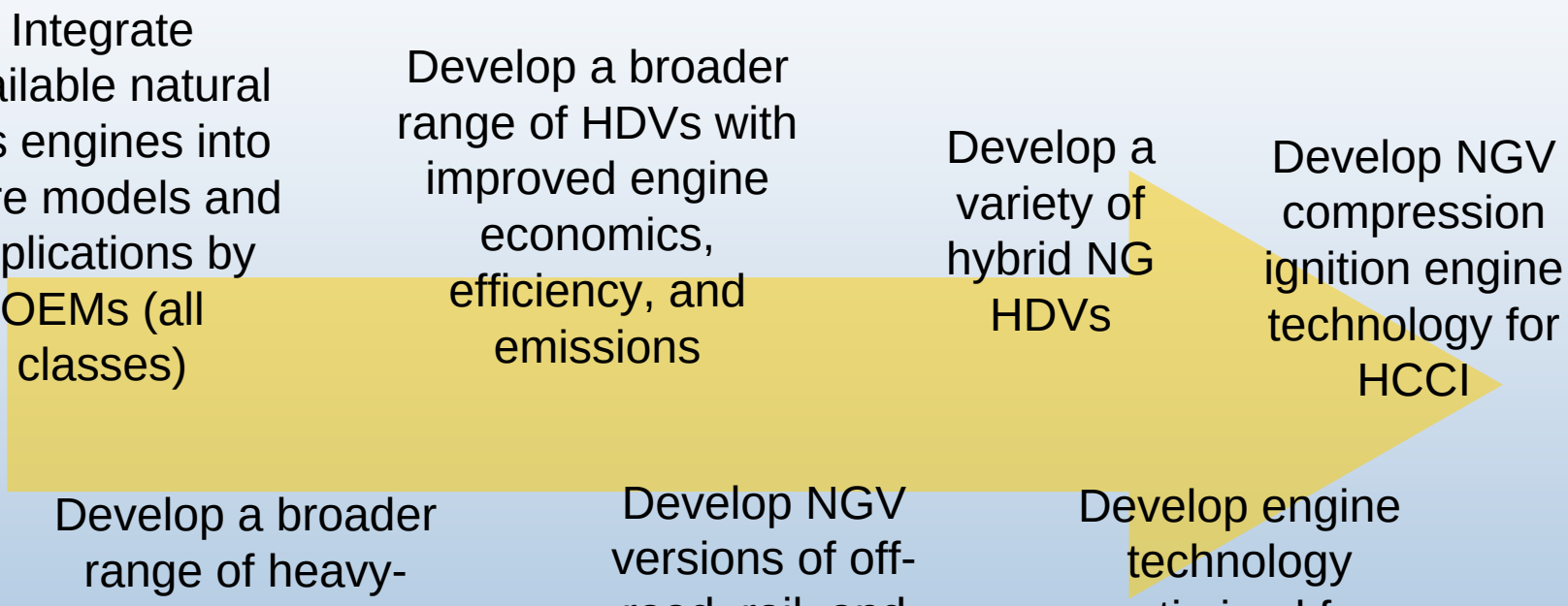
NGVTF Meeting Highlights

- Significant opportunity for NG markets
  - Petroleum independence, peak oil
  - Significant US NG reserves
  - Greenhouse gas emissions
  - Air quality & public health
  - Economics, fuel prices
  - Bridge to biomethane & hydrogen
  - Emerging policies (CA and Federal)
- NG Challenges
  - Transferring technologies to marketplace: high volume/lower cost
  - Higher HP engines for HD or offroad applications
  - Public perception/customer patterns and decision-making
  - Differing standards
  - Variable fuel composition
  - Tank weight/cost trade offs and technology
  - Broader range of vehicles
  - Infrastructure availability/wait times/HD accessibility

Engine Development and Vehicle Integration



Fueling Infrastructure and Storage Development

Develop legacy fleet engine controls and/or fueling infrastructure upgrades to accommodate fuel variability

Develop improved handling, reliability, and durability of LNG dispensing and on-board storage

Provide GPS guidance to NGV fueling station locations and details statewide

Develop an improved composite tank safety device / installation protocol to avoid rupture in localized fire

Develop on-board CNG storage with improved capacity and design features

Develop the next generation of home refueling for natural gas LDVs

RDD&D Action Description	Estimated Cost*
Engine Development and Vehicle Integration Recommendations	
Integrate available natural gas engines into more models and applications by OEMs (all classes)	> $1 million
Develop a broader range of heavy-duty NGV engine sizes and applications	> $1 million
Develop a broader range of HDVs with improved engine economics, efficiency, and emissions	> $1 million
Develop NGV versions of off-road applications	~ $1 million
Develop a variety of hybrid natural gas HDVs	~ $1 million
Develop engine technology optimized for HCNG fuel	~ $1 million
Develop NGV HCCI engine technology	> $1 million
Fueling Infrastructure and Storage Recommendations	
Develop legacy fleet engine controls and/or fueling infrastructure upgrades to accommodate fuel variability	~ $1 million
Research an improved composite tank safety device / installation protocol to avoid rupture in localized fire	≤ $500k
Develop improved handling, reliability, and durability of LNG dispensing and on-board storage	≤ $500k
Develop on-board low-cost, lightweight, conformable, and compact CNG storage at lower-pressure / higher-density	> $1 million
Provide GPS Guidance to NGV Fueling Station Locations/Details Statewide	<$500k
Develop the next generation of home refueling for light-duty NGVs	~ $1 million
Technical and Strategic Studies Recommendations	
Revitalize the NGV Technology Forum	< $500k
Updating the Roadmap through a Roadmap Advisory Council	< $500k

Homework

- Fill out evaluation form!
- Read the CEC-PIER NG Roadmap: the latest version will be posted soon http://www.afdc.energy.gov/afdc/vehicles/natural_gas_forum.html
- Go to grants.gov and subscribe to CEC listserver: www.energy.ca.gov/listservers/index.html
- Keep eyes open for announcement of the bio-gas summit – February 2009

Next Steps

- Presentations available on NGVTF website: http://www.afdc.energy.gov/afdc/vehicles/natural_gas_forum.html the first week of December
- Webcast to be scheduled on AB118 in December
- Confirm and compare NGVTF input with Roadmap based on this workshop
- Follow up with smaller working groups to prioritize activities and identify specific outcomes

NGV Technology Forum

The major objective of the Technology Forum is to consolidate prior efforts for more efficient and effective communication and coordination.